REMARKS

Applicant respectfully requests reconsideration of the present application in view of the reasons that follow.

Claims 1, 2, 4-11, and 13-81 are now pending in this application.

General

Applicants appreciate the further allowance of Claims 6, 15, 16, 24, and 34 if rewritten in independent form.

Applicants still maintain that the other claims pending in the application should not be rejected as detailed in the Office Action for the same reasons discussed in Applicants' Appeal Brief and Applicants' prior Response. The examiner is directed to those documents for a detailed discussion of the arguments which Applicants respectfully re-adopt in this Response.

Response to Examiner's Comments

In Sections 1-10 of the Office Action, the examiner commented on Applicants' arguments. Applicants appreciate those comments for understanding the examiner's position and where the disagreements might be located. Hopefully the following remarks will help clarify any outstanding issues. If these comments do not clarify an issue, a phone conference is respectfully requested to discuss these issues in more depth.

A. Section 2 – Claims 1, 2, 9-11, 13-18, and 29-36

The examiner states that Claims 1, 2, 9-11, 13-18, and 29-36 do not explicitly recite the size of the matrix, that Applicants' arguments are made based on the size of the matrix, and thus Applicants' arguments are unpersuasive.

Applicants respectfully submit that these claims do recite the size of the matrix, but do so based on characteristics of the imaging device rather than in explicit numbers. Specifically, these claims require that "each surrounding neighboring pixel of the defective pixel ... [are included as] matrix elements."

This claim element sets a minimum number of rows and columns based on the location of the defective pixel and based on the set-up of the image capturing device. For example, in the system of Granfors which looks as follows:

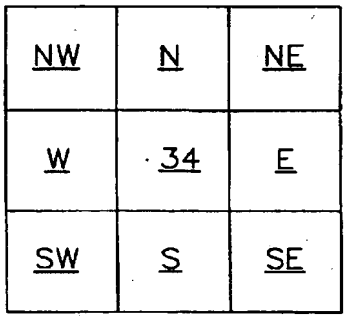


FIG. 3

if the defective pixel was pixel 34, then "each neighboring pixel" would include, pixels NW, N, NE, E, SE, S, SW, and W. Thus, an array including each of these eight pixels as matrix elements[1] would necessarily be at least a 3x3 matrix.

While the size of the matrix required by Claim 1 is variable depending on the location of the defective pixel and the arrangement of pixels in the array of the image capturing device, once the location of the defective pixel is determined and the arrangement of the pixels is known, it is clear that a minimum size is required.

As discussed above, given the location of the defective pixel in Granfors as 34 and the arrangement of pixels in linear rows and columns (as illustrated in Granfors and reproduced above), it can be seen that to meet the language of Claim 1, a matrix having at least 3 rows and 3 columns would be required from Granfors to encompass all of the recited pixels. The matrix cited in the specification by the examiner is merely a 1x3 matrix and not a 3x3 matrix. Thus, Granfors does not anticipate Claim 1.

[1] As required by Claim 1 which recites "wherein at least a portion of the array of pixel values comprises a matrix, and includes the defective pixel as a center matrix element and each surrounding neighboring pixel of the defective pixel as additional matrix elements."

B. Section 3 – Claims 5, 14, 23, 33, 50, 65, and 78

Claims 5 recites "wherein step (b) of providing a correction value includes at least one of a linear interpolation and a weighted average of pixel values corresponding to pixels selected based on a determination that they had the highest local gradient."

The examiner states that pixels directly next to bad pixels are the pixels that have the highest local gradient, Granfors teaches using two of the neighboring pixels, thus this limitation of Claim 5 is met.

Implicit in the examiner's argument is that in a system such as Granfors, each of the eight neighboring pixels will have higher gradient values than the remainder of the pixels in the imaging device. What the examiner has not shown is which of the eight pixels has the highest local gradient.

Granfors selects which one or two of the eight pixels to use purely based on a predetermined selection order. See Col. 4, lines 33-65. Claim 5 requires that pixels be selected based on "a determination that they had the highest local gradient." One example of this is discussed at page 8, line 15, et. seq. in the specification of the present application.

Granfors does not make such a determination when selecting which pixels to use. Thus, Granfors does not teach this limitation of Claim 5.

If the examiner believes an amendment to these claims would clarify that point, such a suggestion is respectfully requested.

C. Section 4 – Claims 8, 27, 28, 36, 46, 61, and 79

The examiner pointed out that his arguments were based on Col. 4, lines 47-53 while Applicants' arguments were based on Col. 4, lines 54-67.

Applicants' arguments were directed to Col. 4, lines 54-67 because Claim 8 recites "replacing the defective pixel with a temporary value." Granfors does not teach replacing the defective pixel with a temporary value (or any other value) at Col. 4, lines 47-53 relied on by

the examiner. Rather, Col. 4, lines 47-53 describes the preference for which values to use to correct the defective pixel.

To the extent that the examiner is reading Col. 4, lines 47-53 out of context to teach something other than what it teaches, the examiner is in error. This error is made even clearer by reference to the entirety of the disclosure relating to the correction of defective pixels. See Col. 4, line 24 to Col. 5, line 7. The disclosure at Col. 4, lines 47-53, relied on by the examiner, are directed to the preference for which pixels to use, while Col. 4, line 54 to Col. 5, line 5, relied on by Applicants, discuss how that preference is implemented in a system.

D. Section 8 – Claims 44 and 51-57

Claim 44 recites "wherein the first pixel, the second pixel, and the third pixel selected may be different for each image."

The examiner states "it is further submitted that each different image has different pixel values, and therefore, the first, second and third values are inherently different for each image."

Applicants submit that the examiner may have misread the claim language of Claim 44. Claim 44 requires that "the first pixel, second pixel, and third pixel selected may be different for each image." Applicants believe that the examiner is reading Claim 44 to recite that "the first pixel value, second pixel value, and third pixel value may be different for each image."

As discussed in Granfors, the pixels to be used to provide the correction value are predetermined in a calibration procedure and are the same for every image. Col. 4, line 54 to Col. 5, line 5. So while pixel values may be different for each image, the selected pixels are always the same.

Thus, Granfors does not meet this claim limitation of Claim 44.

E. Section 10 – Claims 59-63 and 65-81

1. Claim 76

Claim 76 recites "selecting which values to use to provide a value for the defective pixel for the first image based on a characteristic of the first image." Granfors, on the other hand, teaches pre-determining which values are to be used to correct the defective. Col. 4, line 54 to Col. 5, line 5. In Granfors, the characteristics of the image received from the detector have nothing to do with which values are selected to provide the correction value for the defective pixel for that particular image.

2. Claim 59

Claim 59 depends from Claim 76 and further specifies how the values to use to provide a value for the defective pixel are selected based on the characteristic of the first image. Claim 59 specifies that this involves "analyzing a characteristic of each of a plurality of pixels, the characteristic for each of the plurality of pixels based on pixel values of the first image; selecting a first pixel of the plurality of pixels having a first pixel value based on the analyzed characteristic of the first pixel; [and] selecting a second pixel of the plurality of pixels having a second pixel value based on the analyzed characteristic of the second pixel."

Granfors does not teach this process. Rather than analyzing a characteristic relating to the value of a pixel in the image to be corrected, Granfors teaches selecting the pixels in a calibration procedure without regard to the values of the pixels of the image to be corrected. Col. 4, line 33 to Col. 5, line 5.

3. Claim 60

Claim 60 depends from Claim 59 and requires that "the analyzed characteristic comprises a gradient of the pixel being analyzed." In other words, Claim 60 requires that for at least a first and second pixel, a gradient for each of those two pixels needs to be determined, and the gradient has to be based on pixel values of the image being corrected.

Granfors teaches no such analysis of a plurality of pixels.

Conclusion

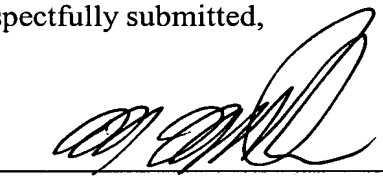
Applicant believes that the present application is now in condition for allowance. Favorable reconsideration of the application as amended is respectfully requested.

The Examiner is invited to contact the undersigned by telephone if it is felt that a telephone interview would advance the prosecution of the present application.

The Commissioner is hereby authorized to charge any additional fees which may be required regarding this application under 37 C.F.R. §§ 1.16-1.17, or credit any overpayment, to Deposit Account No. 07-0845. Should no proper payment be enclosed herewith, as by a check being in the wrong amount, unsigned, post-dated, otherwise improper or informal or even entirely missing, the Commissioner is authorized to charge the unpaid amount to Deposit Account No. 07-0845. If any extensions of time are needed for timely acceptance of papers submitted herewith, Applicant hereby petitions for such extension under 37 C.F.R. §1.136 and authorizes payment of any such extensions fees to Deposit Account No. 07-0845.

Respectfully submitted,

Date June 22, 2005

By 

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